

Form PTO-1449
REV. 1-2001

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO.

LIST OF PRIOR ART CITED BY APPLICANT
(Use several sheets if nec ssary)

APPLICANT

Woolan et al

FILING DATE

GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	5872630	2/1999	Johr et al.	356	369	
HP	AB	5666201	9/1997	Johr et al.	356	369	
HP	AC	5706212	1/1998	Thompson et al	356	369	
HP	AD	6320657	11/2001	Aspner et al.	356	369	
HP	AE	6134012	10/2000	Aspner et al.	356	369	
HP	AF	5973787	10/1999	Aspner et al.	356	369	
HP	AG	5877859	3/1999	Aspner et al.	356	364	
HP	AH	4053232	10/1997	Dill et al.	356	118	
HP	AI	5596406	1/1997	Rorencwais et al	356	327	
HP	AJ	4668086	5/1987	Redner	356	33	
HP	AK	5373359	12/1994	Woolan et al.	356	328	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
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OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AR	WO 01/90687 A2 by Thermo wave	✓
	AS		

EXAMINER	/Hoa Pham/	DATE CONSIDERED	09/05/2006
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PT -3449 REV. 7-00 <div style="text-align: center;"> U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE </div>	ATT. DOCKET NO. _____ SERIAL NO. _____ APPLICANT <u>Woolham et al.</u> FILING DATE _____ GROUP _____
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U.S. PATENT DOCUMENTS									
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILIN DATE IF APPR PRIATE		
HP	AA	5504582	4/1996	Johr et al	356	369			
HP	AB	5521706	5/1996	Green et al.	356	369			
HP	AC	6034777	3/2000	Johr et al.	356	369			
HP	AD	5929995	7/1999	Johr	356	369			
HP	AE	5329357	7/1994	Bernoux et al.	356	369			
HP	AF	5581350	12/1996	Chen et al	356	369			
HP	AG	4917461	4/1990	Goldstein	350	286			
HP	AH	4772104	9/1988	Buhrer	350	403			
HP	AI	4961634	10/1990	Chipman et al.	350	403			
HP	AJ	6181421	1/2001	Hipner et al.	356	369			
HP	AK	5946098	8/1999	Johr et al.	356	364			

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	6 084 674	7/2000	Jahr et al.	356	364	
HP	AB	6 084 675	7/2000	Hertzinger et al.	356	369	
HP	AC	6 118 537	9/2000	Jahr et al.	356	369	
HP	AD	6 100 981	8/2000	Jahr et al.	356	364	
HP	AE	6 141 102	10/2000	Jahr et al.	356	364	
HP	AF	5 963 325	10/1999	Jahr et al.	356	364	
HP	AG	5 946 098	8/1999	Jahr et al.	356	364	
HP	AH	5 844 951	10/1895	ABBE			
HP	AI	4 556 292	12/1985	McThysse et al.	350	394	
HP	AJ	5 475 525	12/1995	Terner et al.	359	245	
HP	AK	3 817 624	6/1974	Martin			

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William et al

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	2447828	2/1945	West			
HP	AB	4176951	12/1979	Robert et al.	356	33	
HP	AC	4179217	12/1979	Robert et al.	356	33	
HP	AD	5793460	8/1998	Lacey et al	356	73	
HP	AE	5166752	11/1992	Spanier et al.	356	369	
HP	AF	4054812	10/1977	Lenner et al.	313	44	
HP	AG	4322165	3/1982	Ellenbracht et al.	356	316	
HP	AH	4875773	10/1989	Burns et al.	356	328	
HP	AI	6414302	7/2002	Freehoff	250	225	
HP	AJ	5091320	2/1992	Aspner et al	437	8	
HP	AK	4770895	9/1988	Hartley	427	10	

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OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

		1	WO 01/08625 A3	SeTech Invention
		2	US2002/0149774 A1	Mc Aninch
HP		3	VUV-VASE, JAWOOLAN	Marketing Flyer ✓

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HP	AA	6 493 097	12/2002	Ivarsson	356	630	
HP	AB	5 229 833	7/1993	Stewart	356	364	
HP	AC	5 337 146	8/1994	Azzam	356	367	
HP	AD	6 031 619	2/2000	Wilkin et al	356	419	
HP	AE	5 818 596	10/1998	Inai et al.	356	381	
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

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							YES	NO
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	AM							

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1		US 2003/0071996 A1	Wang et al	4/2003
2		US 2003/0150997 A1	Chen et al	8/2003

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PLEASE USE THIS FOR PTO. FORM 1449 REGARDING SCIENTIFIC ARTICLES ...

- ~~Regression Calibration Method For Rotating Element Ellipsometers", which appeared in Thin Film Solids, Vol. 234 in 1993.~~
- HP "A New Purged UV Spectroscopic Ellipsometer to Characterize Thin Films and Multilayers at 157nm", Boher et al., Proc. SPIE, Vol. 3998, (June 2000). ✓
- HP "Characterisation of Thin Films and Multilayers in the VUV Wavelength Range Using Spectroscopic Ellipsometry and Spectroscopic Photometry", Boher et al., 157nm Symposium, May 2000). ✓
- HP "Progress in Spectroscopic Ellipsometry: Applications from Ultraviolet to Infrared", Hilfiker et al., J. Vac. Sci. Technol. A, (Jul/Aug 2003). ✓
- HP "Atomic Scale Characterization of Semiconductors by In-Situ Real Time Spectroscopic Ellipsometry", Boher et al., Thin Solid Films 318 (1998). ✓
- HP "Optical Characterization in the Vacuum Ultraviolet with Variable Angle Spectroscopic Ellipsometry: 157nm and below", Hilfiker et al., Proc. SPIE Vol. 3998 (2000). ✓
- HP "Feasibility and Applicability of Integrated Metrology Using Spectroscopic Ellipsometry in a Cluster Tool", Boher et al., SPIE Vol. 4449, (2001). ✓
- ~~Four papers authored or co-authored by Collins, which describe use of multichannels and rotating element ellipsometers, including rotating compensator, but not in an environmental chamber are:~~
- HP "Characterization of Wide Bandgap Thin Film Growth Using UV-Extended Real Time Spectroscopic Ellipsometry Applications to Cubic Boron Nitride", Zapien et al., J. of Wide Bandgap Materials, Vol 9, No. 3 (Jan 2002); ✓
- HP "Automated Rotating Element Ellipsometers: Calibration, Operation, and Real-Time Applications", Collins, Rev. Sci. Instrum. 61 (8) (aug. 1990); ✓
- HP "Waveform Analysis With Optical Multichannel Detectors: Applications for Rapid-Scan Spectroscopic Ellipsometers", An et al., Rev. Sci. Instrum. 62(8), (Aug. 1991); and ✓
- HP "Multichannel Ellipsometer for Real Time Spectroscopy of Thin Film Deposition for 1.5 to 6.5 eV", Zapien et al., Rev. Sci. Instrum. Vol. 71, No. 9, (Sept. 1991). ✓